

REMARKS/ARGUMENTS

Claims 15-28 are active in this application.

Claim 15 has been amended to define more particularly the aspect of homolog distribution in the alkylglycol alkoxylate or alkyldiglycol alkoxylate preparation as claimed.

Support for this amendment is found on page 6, line 30 through page 8, line 6 in the specification. In this section of the specification, the Applicants have described alkoxylating alkyl glycols or diglycols with alkoxides such that the alkoxylation degree is specific for alkyglycols (page 6, lines 33-34). The homolog distribution of such a reaction and thus the products obtained thereby is shown in the example table on page 7, which had been discussed at length in Applicants previous response. The alkoxylates have a homolog distribution whereby the homolog bearing three equivalents (C6 EO3) of ethylene oxide (desired number) is present in the major amount of 24.6% whereas the homologs bearing 2 or 4 (C6 EO2 or C6 EO4)—(one more or one less than target) equivalents of ethylene oxide are present in the amount of 20.3 or 19.4% by weight. The sum of these homologs is 64.3 %.

No new matter is believed to have been added by these amendments.

In view of this clarification to the homolog distribution in the claims, the rejection under 35 USC 112, second paragraph can longer be applicable. Indeed, one in this field would easily understand what is meant by, and therefore encompassed, by the alkylglycol alkoxylate or alkyldiglycol alkoxylate free from alcohol as is claimed.

Withdrawal of this rejection is therefore requested.

The Office has also maintained the rejections based on Evers and Oldenhove, primarily because the materials described in these references are allegedly free of alcohol and obtained by the same process as is claimed (see pages 4-5 of the Official Action). As further reasoning to maintain the rejection is the alleged lack of clarity for the homolog distribution

as set forth in the prior set of claims. However, as is discussed above and apparent from the claims, the material claimed in Claim 15 is defined by a certain homolog distribution that is present in this material but is NOT present in the material described by the prior art.

The Office also cites page 8, lines 30-34 as an alleged admission by the Applicants that the claimed surfactants were known from Evers. However, it is apparent that there is a misunderstanding as to what is disclosed in the specification. This discussion of known surfactants relates to surfactants present in a mixture with the claimed alkylglycol alkoxylate or alkylglycol alkoxylates (see, e.g., Claim 16) which when dissolved in an amount of 5 g/l of water, exhibit an interfacial tension of less than 45 mN/m at 20°C. Said another way, this cited discussion is about surfactants in addition to the material claimed and therefore reliance on this section of the disclosure is misguided.

Detailed reasons why the materials are different have been provided in previous replies but for the sake of convenience, the salient points are discussed again below.

In short, the material in Evers (see page 2, lines 40-45) which is prepared by known processes such as condensation in the corresponding alcohol and alkylene oxide (referencing page 3, lines 32-34)--which as shown in the specification in the table on page 7, has a different homolog distribution than the alkoxylate prepared through such an alkoxylation reaction as is claimed.

This table shows the distribution curves for a customary n-hexanol ethoxylate (+3 EO), derived from n-hexanol, and an n-hexylglycol ethoxylate (+2 EO), derived from n-hexylglycol, side by side. The first column gives the amount of ethylene oxide (0-6) bonded to the n-hexyl radical (C6). On average, the two compounds contain the same amount of EO units.

| Chemistry | Area % | |
|-----------|------------------|----------------------|
| | n-Hexanol + 3 EO | n-Hexylglycol + 2 EO |
| C6 E00 | 2.4 | 0 |
| C6 E01 | 5 | 8.3 |
| C6 E02 | 10.2 | 20.3 |
| C6 E03 | 13.5 | 24.6 |
| C6 E04 | 14.3 | 19.4 |
| C6 E05 | 13.5 | 12.9 |
| C6 E06 | 11.2 | 7.5 |
| Remainder | 29.9 | 7 |

The second column of this table (like Evers) shows that homologs having 2, 3, 4, 5 and 6 equivalents of ethylene oxide are each present in the homolog mixture in an amount of about 13% by weight with an additional 29.9% remainder present. The third column of this table shows that the alkoxylates according to the present invention show completely different homolog distribution whereby the homolog bearing three equivalents (C6 EO3) of ethylene oxide is present in the major amount of 24.6% whereas the homologs bearing 2 or 4 (C6 EO2 or C6 EO4) equivalents of ethylene oxide are present in the amount of 20.3 or 19.4% by weight. The other homologs are present only in minor amounts of 8.3 or 7.5% with the remainder being 7% by weight.

This table, therefore, shows that the alkoxylate prepared by the conventional means of condensation of the corresponding alcohol as in Evers results in a different material than that defined in the claims which is free from alcohol and which has a homolog distribution specific for alkylglycol results.

Oldenhove on the other hand doesn't describe how the water soluble water dispersible amphiphiles are prepared but it is reasonable to presume that Oldenhove also uses the conventional condensation of the corresponding alcohol as described in Evers. Thus, the material described in Oldenhove is also different for the reasons discussed above, i.e.,

Oldenhove does not describe an alkoxylate as claimed which is free from alcohol and such that at least 50% of the sum of homologs of the total homologs present are the homolog having the desired number of alkylene oxide units, the homolog having one alkylene oxide unit less than the desired number, and the homology having one additional alkylene oxide unit than the desired number.

Why is it that the homolog distribution and the absence of alcohol are important in the present invention? As discussed in the specification on page 5 the specific homolog distribution has a positive effect on wetting ability of wetting auxiliaries even in dilute systems and for increasing the solubility of wetting auxiliaries and aqueous formulations comprising nonanionic surfactants. The alkoxylates in the claims have the homolog distribution important for aggregation behavior and for other properties specifically without containing alcohol (see page 4, lines 12-14).

Indeed, the examples presented in the specification demonstrate the advantageous behavior of the alkoxylates being claimed. In the examples starting on page 13 there are presented two examples; Example 1 and Example 2. Example 1 shows that the use of the hexylglycol ethoxylate enables the reduction of surfactant considerably. Example 2 shows that there are particular advantages for using the claimed alkoxylates in terms of the interfacial tension. The paper finishing example on pages 14-15 shows that the inventive alkylglycol alkoxylates significantly improve the uniformity of an image that is printed on a treated paper (as outlined in the table on page 15). As neither Evers nor Oldenhove describe the manner in which the alkoxylates are obtained (as defined in Claim 15) and Applicants have discussed why the alkoxylates prepared in this manner are different from those described in Evers and Oldenhove, the claims are not anticipated by nor obvious in view of Evers or Oldenhove.

Accordingly, Applicants request that the rejections under 35 USC 102(b) and 35 USC 103(a) in view of Evers and Oldenhove be withdrawn.

With respect to the double patenting rejection in view of U.S. Patent No. 6,680,412 this patent also describes obtaining the alkoxylates by reacting alcohol with alkylene oxide (see Claim 7 in column 12 of the cited patent). This process, however, does not yield alkylglycol alkoxylate or alkylglycol alkoxylate that is free from alcohol and which has a homolog distribution such that at least 50% of the sum of homologs of the total homologs present are the homolog having the desired number of alkylene oxide units, the homolog having one alkylene oxide unit less than the desired number, and the homology having one additional alkylene oxide unit than the desired number. Indeed, Applicants have already explained in detail why this is so, and provided side-by-side evidence of the same.

Accordingly, the claims of the present application are not obvious in view of the claims of U.S. '412 patent and as such withdrawal of this rejection is again requested.

A Notice of Allowance is requested for all pending claims. Should the Examiner deem that any further action is required to place this application in even better form for allowance, he is invited to contact the Applicants' undersigned representative.

Respectfully submitted,

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